

REMARKS

Reconsideration and allowance of the above-referenced application are respectfully requested.

Claims 1-3 have been amended. Support for the amendments can be found, for example, on page 12, lines 9-10 of the specification and on page 13, line 27-28 of the specification.

Further, in response to the Examiner's objections, the hyperlinks have been deleted from the specification.

Rejection of Claims 1, 2, 4 and 5 Under 35 U.S.C. 112, First Paragraph

The Examiner contends that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In particular, the Examiner alleges that the specification only teaches SEQ ID NO:25 encoding SEQ ID NO:26 which has desaturase activity. Further, the Examiner contends that the specification does not teach the structural features required for desaturase activity.

In response, Applicants submit that the specification teaches two nucleotide sequences (i.e., SEQ ID NO:25 and SEQ ID NO:41) which encode two amino acid sequences (i.e., SEQ ID NO:26 and SEQ ID NO:42, respectively) having desaturase activity. Further, Figure 4 shows an amino acid comparison between SEQ ID NO:26 and a known delta 15-desaturase from *Synechocystis sp.* Figure 5 shows an amino acid

comparison between SEQ ID NO:26 and a known delta-17 desaturase from *C. elegans*.

Additionally, Figure 8 shows an amino acid comparison between SEQ ID NO:42 and a known delta 12-desaturase.

Based upon the observations that can be made by one of ordinary skill in the art from the various sequence comparisons, it can be concluded that the claimed invention encompasses a scope well beyond the nucleotide sequence represented by SEQ ID NO:25 and the encoded amino acid or protein represented by SEQ ID NO:26. In particular, other sequences related to these two sequences are also considered to fall within the scope of the present invention.

It is submitted that the Section 112, first paragraph rejection of claims 1, 2, 4 and 5 has been overcome and should be withdrawn accordingly.

Rejection of Claims 1, 2, 4 and 5 Under 35 U.S.C. 112, First Paragraph

The Examiner has rejected claims 1, 2, 4 and 5 under Section 112, first paragraph. More specifically, the Examiner contends that the specification, while being enabling for an isolated nucleotide sequence of SEQ ID NO:25 encoding SEQ ID NO:26, does not reasonably provide enablement for any isolated nucleic acid encoding a desaturase that has at least 50% sequence identity to SEQ ID NO:25 or any isolated nucleic acid sequence or fragment thereof comprising or complementary to a nucleotide sequence having at least 50% identity to SEQ ID NO:25.

In response, Applicants respectfully traverse the rejection of claims 1, 2, 4 and 5 under Section 112, first paragraph. In particular, the specification teaches sequences beyond SEQ ID NO:25 which would enable one of ordinary skill in the art to practice the

claimed invention without undue experimentation. For example, as noted in the argument presented directly above, Figure 5 discloses the amino acid sequence of a *C. elegans* delta 17-desaturase from which the nucleotide sequence(s) may be deduced. Additionally, one of ordinary skill in the art could readily determine if a nucleotide sequence falls within the scope of the claim of interest by taking the sequence in question and comparing it to SEQ ID NO:25 in order to generate a percent identity. Thus, it is believed that the Section 112, first paragraph rejection has been overcome and should be withdrawn accordingly.

Rejection of Claims 2, 4 and 5 Under 35 U.S.C. 102(b)

The Examiner has rejected claims 2, 4 and 5 under Section 102(b) as being anticipated by Thomas et al. (U.S. Patent No. 5,614,393). In particular, the Examiner contends that Thomas et al. teach an isolated nucleic acid encoding a desaturase, and a fragment thereof which anticipates the claims.

In response, Applicants respectfully traverse the rejection of claims 2, 4 and 5 under Section 102(b) as being anticipated by Thomas et al. More specifically, Thomas et al. disclose the sequence of a nucleic acid which encodes a borage delta 6-desaturase. However, the subject matter of claims 2, 4 and 5 is neither taught nor suggested in Thomas et al. Accordingly, it is submitted that the rejection of claims 2, 4 and 5 under Section 102(b) has been overcome and should be withdrawn accordingly. The claimed invention is not disclosed in the cited document.

Rejection of Claims 2, 4 and 5 Under 35 U.S.C. 102(e)

The Examiner has rejected claims 2, 4 and 5 under Section 102(e) as being anticipated by Roessler et al. (U.S. Patent Application Publication No. 20050112719 A1). The Examiner alleges that Roessler et al. teach an isolated nucleic acid encoding a desaturase and having a local similarity of 52.2% from nucleotides 203-1016. In particular, the Examiner points to SEQ ID NO:16.

Applicants respectfully traverse the rejection of claims 2, 4 and 5 under Section 102(e). It is submitted that Roessler et al. disclose various nucleic acid sequences (and encoded amino acid sequences) derived from a Thraustochytriales microorganism. However, Roessler et al. does not disclose or suggest the subject matter of claims 2, 4 and 5 and there does not anticipate the claimed invention. Consequently, the Section 102(e) rejection of claims 2, 4 and 5 should be withdrawn.

In conclusion, it is believed that the subject application is in condition of allowance and Notice to that effect is respectfully requested.

Should the Examiner have any questions concerning this matter, she is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,
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